State of Missouri

Draft Rule Amendment
10 CSR 20-7.015
Effluent Regulations

Missouri Department of Natural Resources
Water Protection and Soil Conservation Division
Water Protection Program

March 2, 2005

Title 10—DEPARTMENT OF NATURAL RESOURCES
Division 20—Clean Water Commission
Chapter 7—Water Quality

Proposed Amendment

10 CSR 20-7.015 Effluent Regulations

The Department of Natural Resources is amending (1)(A)3. to update the name change of Geological Survey and Resource Assessment Division, (2)(B)4. to add language referencing the implementation schedule for facilities without disinfected effluent and referencing the temporary suspension of accountability for bacteria standards, (3)(B)3. to add language referencing the implementation schedule for facilities without disinfected effluent and referencing the temporary suspension of accountability for bacteria standards, (3)(F)1. to clarify the effective date of phosphorus rule for Lake Taneycomo, (3)(G)2. to clarify the effective date of phosphorus rule for Table Rock Lake, (3)(G)3. to clarify the effective date of phosphorus rule for Table Rock Lake, (3)(G)4. to clarify the effective date of phosphorus rule for Table Rock Lake, (4)(B)5. to revise confusing dechlorination language, (6) to make this rule more consistent with the Water Quality Standards, (7)(C) to update the name change of Geological Survey and Resource Assessment Division, (8)(B)4. to add language referencing the implementation schedule for facilities without disinfected effluent and referencing the temporary suspension of accountability for bacteria standards, (9)(H) to add language explaining the implementation schedule for facilities without disinfected effluent affected by whole body contact recreation designation in 10 CSR 20-7.031, Water Quality Standards, and (9)(I) to add language for the temporary suspension of accountability for bacteria standards during wet weather.

PURPOSE: This amendment implements changes resulting from the revisions of Missouri's Water Quality Standards (WQS).

In 2001, the Missouri Department of Natural Resources (MDNR or Department) Division of Geology and Land Survey officially changed its title to the Geological Survey and Resource Assessment Division. Therefore, it is necessary to modify language in the Effluent Regulations to reflect the change.

Section 101(a)(2) of the CWA establishes as a national goal "water quality which provides for the protection and propagation of fish, shellfish, and wildlife and … recreation in and on the water," wherever attainable. This national goal is commonly referred to as the "fishable/swimmable" goal. Missouri currently lists all classified waters for aquatic life, but selectively lists water bodies for whole body contact recreation. Therefore all waters listed in 10 CSR 20-7.031 Tables G and H will be designated for whole body contact recreation upon the effective date of the Water Quality Standards at 10 CSR 20-7.031. An implementation schedule will be included within which affected permitted facilities must comply with the revised WQS.

. Under the Lakes and Reservoirs section, the adoption dates of the phosphorus rules for Lake Taneycomo [10 CSR 20-7.015(3)(F)] and Table Rock Lake [10 CSR 20-7.015(3)(G)] were not specifically mentioned. Therefore the dates will be added to ensure correct interpretation of these regulations.

Language describing dechlorination of discharges to losing stream in paragraph (4)(B)5. is confusing as written. A special workgroup was formed to address this issue, called the Total Residual Chlorine Workgroup. Water Pollution Control Branch staff and the workgroup agreed that the intent of the regulation was to require dechlorination for all discharges to losing streams. Therefore, the language was revised to clarify the issue.

It has been stated that a couple of Missouri's WQS are inconsistent and/or conflict with the Antidegredation Policy. Maintaining consistency with Tier III in 10 CSR 20-7.031(2)(C), all dischargers into Outstanding National Resource Waters (ONRWs) and Outstanding State Resource Waters (OSRWs) or into their watershed must be subject to special effluent limitations as required in 10 CSR 20-7.015(6).

Missouri currently allows exceedance of bacteria limits during periods of storm water runoff (high flow exemption). As currently stated in 10 CSR 20-7.031, Water Quality Standards, the high flow exemption might not ensure that whole body contact recreation is adequately protected. Also of concern, the high flow exemption is broad and qualitative. Therefore, the high flow exemption will be revised and moved to 10 CSR 20-7.015 Effluent Regulations.

When discovered, typographical errors found in the rule were corrected.

(1) Designations of Waters of the State.

(A) For the purpose of this rule, the waters of the state are divided into the following categories:

3. A losing stream is a stream which distributes thirty percent (30%) or more of its flow through natural processes such as through permeable geologic materials into a bedrock aquifer within two (2) miles' flow distance downstream of an existing or proposed discharge. Flow measurements to determine percentage of water loss must be corrected to approximate the seven (7)-day Q10 stream flow. If a stream bed or drainage way has an intermittent flow or a flow insufficient to measure in accordance with this rule, it may be determined to be a losing stream on the basis of channel development, valley configuration, vegetation development, dye tracing studies, bedrock characteristics, geographical data and other geological factors. Only discharges which in the opinion of the department reach the losing section and which occur within two (2) miles upstream of the losing section of the stream shall be considered releases to a losing stream. A list of known losing streams is available *from the Water Pollution Control Program]* **in the Water Quality Standards, 10 CSR 20-7.031 Table J—Losing Streams**. Other streams may be determined to be losing by the *[Division of Geology and Land Survey]* **Geological Survey and Resource Assessment Division**;

(2) Effluent Limitations for the Missouri and Mississippi Rivers.

(B) Discharges from wastewater treatment facilities which receive primarily domestic waste or from publicly-owned treatment works (POTWs) shall undergo treatment sufficient to conform to the following limitations:

4. Fecal coliform. Discharges *[to the Mississippi from the Missouri-Iowa line down to Lock and Dam 26]* **into segments identified as whole body contact areas** shall not contain more than a monthly average of four hundred (400) fecal coliform colonies per one hundred milliliters (100 ml) and a daily maximum of one thousand (1000) fecal coliform colonies per one hundred milliliters (100 ml) from April 1 to October 31. The department may waive or relax this limitation if the owner or operator of the wastewater treatment facility can demonstrate that neither health nor water quality will be endangered by failure to disinfect. **Facilities without disinfected effluent shall comply with the implementation schedule found in subsection (9)(H) of this rule. During periods of wet weather, a temporary suspension of accountability for bacteria standards may be established through the process described in subsection (9)(I) of this rule.**

(3) Effluent Limitations for the Lakes and Reservoirs.

(B) Discharges from wastewater treatment facilities which receive primarily domestic waste or from POTWs shall undergo treatment sufficient to conform to the following limitations:

3. Discharge to lakes and reservoirs identified as whole body contact areas shall not contain more than a monthly average of four hundred (400) fecal coliform colonies per one hundred milliliters (100 ml) and a daily maximum of one thousand (1,000) fecal coliform colonies per one hundred milliliters (100 ml) from April 1 to October 31. The department may waive or relax this limitation if the permittee can demonstrate that neither health nor water quality will be endangered by failure to disinfect**. Facilities without disinfected effluent shall comply with the implementation schedule found in subsection (9)(H) of this rule. During periods of wet weather, a temporary suspension of accountability for bacteria standards may be established through the process described in subsection (9)(I) of this rule**;

(F) In addition to other requirements in this section, discharges to Lake Taneycomo and its tributaries between Table Rock Dam and Power Site Dam (and excluding the discharges from the dams) shall not exceed five-tenths (0.5) mg/l of phosphorus as a monthly average. Discharges meeting both the following conditions shall be exempt from this requirement:

1. Those permitted prior to *[adoption of this rule]* **May 9, 1994**; and

2. Those with design flows of less than twenty-two thousand five hundred gallons per day (22,500 gpd). All existing facilities whose capacity is increased would be subject to phosphorus limitations. The department may allow the construction and operation of interim facilities without phosphorus control provided their discharges are connected to regional treatment facilities with phosphorus control not later than three (3) years after authorization. Discharges in the White River basin and outside of the area designated above for phosphorus limitations shall be monitored for phosphorus discharges, and the frequency of monitoring shall be the same as that for BOD_5 and NFR, but not less than annually. The department may reduce the frequency of monitoring if the monitoring data is sufficient for water quality planning purposes.

(G) In addition to other requirements in this section, discharges to Table Rock Lake watershed, defined as hydrologic units numbered 11010001 and 11010002, shall not exceed five-tenths milligrams per liter (0.5 mg/l) of phosphorus as a monthly average according to the following schedules except as noted in paragraph (3)(G)5.:

1. Any new discharge shall comply with this new requirement upon the start of operations;

2. Any existing discharge, or any sum of discharges operated by a single continuing authority, with a design flow of 1.0 mgd or greater shall comply no later than *[four (4) years after the effective date of this rule]* **November 30, 2003**;

3. Any existing discharge, or any sum of discharges operated by a single continuing authority, with a design flow of 0.1 mgd or greater, but less than 1.0 mgd, shall comply no later than *[eight (8) years after the effective date of this rule]* **November 30, 2007**, and shall not exceed one milligram per liter (1.0 mg/L) as a monthly average as soon as possible and no later than *[four (4) years after the effective date of this rule]* **November 30, 2003**;

4. Any existing discharge with a design flow of twenty-two thousand five hundred gallons per day (22,500 gpd) or greater, but less than 0.1 mgd, shall comply no later than *[eight (8) years after the effective date of this rule]* **November 30, 2007**;

5. Any existing discharge with a design flow of less than twenty-two thousand five hundred gallons per day (22,500 gpd) permitted prior to *[the effective date of this rule]* **November 30, 1999** shall be exempt from this requirement unless the design flow is increased; and

6. Any existing discharge in which the design flow is increased shall comply according to the schedule applicable to the final design flow.

(4) Effluent Limitations for Losing Streams.

(B) If the department agrees to allow a release to a losing stream, the permit will be written using the limitations contained in subsections (4)(B) and (C). Discharges from wastewater treatment facilities which receive primarily domestic waste or from POTWs permitted under this section shall undergo treatment sufficient to conform to the following limitations:

5. *[Where chlorine is used as a disinfectant, the effluent shall be dechlorinated except when the discharge is-*

A. Into an unclassified stream at least one (1) mile from a water quality standard classified stream; and

B. Into a flowing stream where the seven (7)-day Q10 flow is equal to or greater than fifty (50) times the effluent flow;] **All chlorinated effluent discharges to losing streams or within two (2) stream miles flow distance upstream of a losing stream shall also be dechlorinated prior to discharge.**

(6) *[Effluent Limita*tions *for Special Streams.]* **Discharge Restrictions for Outstanding National or State Resource Waters and Drainages Thereto.**

[(A) Limits for Wild and Scenic Rivers and Ozark National Scenic Riverways and Drainages Thereto.]

[1. The following limitations represent the maximum amount of pollutants which may be discharged from any point source, water contaminant source or wastewater treatment facility to waters included in this section.

*2. Discharges from wastewater treatment facilities**,** which receive primarily domestic waste or from POTWs are limited as follows:*

A. New releases from any source other than POTW facilities are prohibited;

B. Discharges from sources that existed before June 29, 1974, or if additional stream segments are placed in this section, discharges that were permitted at the time of the designation will be allowed;

C. Discharges from POTWs; and

D. Releases from the permitted facilities under subparagraphs (6)(A)2.A.-C. shall meet the following effluent limitation:

(I) BOD_5 equal to or less than a monthly average of ten (10) mg/l and a weekly average of fifteen (15) mg/l;

(II) NFRs equal to or less than a monthly average of fifteen (15) mg/l and a weekly average of twenty (20) mg/l;

(III) pH shall be maintained in the range from six to nine (6-9) standard units;

(IV) Discharges shall not contain more than a monthly average of four hundred (400) fecal coliform colonies per one hundred milliliters (100 ml) and a daily maximum of one thousand (1,000) fecal coliform colonies per one hundred milliliters (100 ml);

(V) Where chlorine is used as a disinfectant, the effluent shall be dechlorinated except when the discharge is--

(a) Into an unclassified stream at least one (1) mile from a water quality standard classified stream; or

(b) Into a flowing stream where the seven (7)-day Q10 flow is equal to or greater than fifty (50) times the effluent flow;

(VI) If the facility is a POTW wastewater treatment facility providing at least primary treatment during a precipitation event and discharges on a noncontinuous basis, the discharge may be allowed subject to the following:

(a) BOD_5 and NFRs equal to or less than a weekly average of forty-five (45) mg/l;

(b) pH shall be maintained in the range from six to nine (6-9) standard units; and

(c) Only the wastewater in excess of the capacity of the noncontinuous wastewater treatment plant hydraulic capacity may be discharged; and

(VII) When the wastewater treatment process causes nitrification which affects the BOD_5 reading, the permittee can petition the department to substitute carbonaceous BOD_5 in lieu of regular BOD_5 testing. If the department concurs that nitrification is occurring, the department will set a carbonaceous BOD_5 at five (5) mg/l less than the regular BOD_5 in the operating permit.

3. Industrial, agricultural and other non-domestic contaminant sources, point sources or wastewater treatment facilities which are not included under subparagraph (6)(A)2.B. shall not be allowed to discharge. Agrichemical facilities shall be designed and constructed so that all bulk liquid pesticide nonmobile storage containers and all bulk liquid fertilizer nonmobile storage containers are located within a secondary containment facility. Dry bulk pesticides and dry bulk fertilizers shall be stored in a building so that they are protected from the weather. The floors of the buildings shall be constructed of an approved design and material(s). At an agrichemical facility, all transferring, loading, unloading, mixing and repackaging of bulk agrichemicals shall be conducted in an operational area. All precipitation collected in the operational containment area or secondary containment area as well as process generated wastewater shall be stored and disposed of in a no-discharge manner.

4. Monitoring requirements.

A. The department will develop a wastewater and sludge sampling program based on design flow that will require, at a minimum, one (1) wastewater sample per year for each twenty-five thousand (25,000) gpd of effluent, or fraction thereof, except that--

(I) Point sources that discharge less than five thousand (5,000) gpd may only be required to submit an annual report;

(II) Point sources that discharge more than one point three (1.3) mgd will be required at a minimum to collect fifty-two (52) wastewater samples per year; and

(III) Sludge sampling will be established in the permit.

B. Sampling frequency shall be spread evenly throughout the discharge year. This means that a point source with a continuous discharge shall take samples on a regular schedule, while point sources with seasonal discharges shall collect samples during the season of discharge.

C. Sample types shall be as follows:

(I) Samples collected from lagoons may be grab samples;

(II) Samples collected from mechanical plants shall be twenty-four (24)-hour composite samples, unless otherwise specified in the operating permit; and

(III) Sludge samples shall be a grab sample unless otherwise specified in the operating permit.

D. The monitoring frequency and sample types stated in paragraph (6)(D)3. are minimum requirements. The permit writer shall establish monitoring frequencies and sampling types to fulfill the site specific informational needs of the department.

(B) Limits for Outstanding State Resource Waters as per Water Quality Standards.

1. Discharges shall not cause the current water quality in the streams to be lowered.

2. Discharges will be permitted as long as the requirements of paragraph (6)(B)1. are met and the limitations in section (8) are not exceeded.]

(A) Discharge Restrictions for Outstanding National or State Resource Waters.

1. Except as specified below, no new or expanded discharges shall be allowed directly into these waters.

2. Discharge from sources that existed before June 29, 1974, are allowed.

3. When additional waters are designated in 10 CSR 20-7.031—Tables D & E, discharges that are permitted at the time of the designation are allowed.

4. Temporary lowering of water quality, but not below water quality standards, may be allowed from storm water discharges during a construction project with prior approval by the department.

(B) Discharge Restrictions in the watershed of Outstanding National or State Resource Waters.

1. All discharges into the tributaries of designated waters must ensure that no lowering of water quality occurs at or below the point the tributary enters the designated water.

2. Discharges within the watershed of designated waters shall not result in the lowering of water quality in the designated water through hydrologic connections, such as through groundwater.

3. Watershed, as used in this section, shall be any drainage area, on the surface or underground, that drains or flows to a designated water.

(7) Effluent Limitations for Subsurface Waters.

(C) All abandoned wells and test holes shall be properly plugged or sealed to prevent pollution of subsurface waters, as per the requirements of the *[Division of Geology and Land Survey]* **Geological Survey and Resource Assessment Division**.

(8) Effluent Limitations for All Waters, Except Those in Paragraphs (1)(A)1.-6.

(A) The following limitations represent the maximum amount of pollutants which may be discharged from any point source, water contaminant source or wastewater treatment facility.

(B) Discharges from wastewater treatment facilities which receive primarily domestic waste or POTWs shall undergo treatment sufficient to conform to the following limitations:

4. Fecal coliform.

A. Discharges to streams identified as whole body contact areas, discharges within two (2) miles upstream of these areas and discharges to streams with a seven (7)-day Q10 flow of zero (0) in metropolitan areas where the stream is readily accessible to the public shall not contain more than a monthly average of four hundred (400) fecal coliform colonies per one hundred milliliters (100 ml) and a daily maximum of one thousand (1000) fecal coliform colonies per one hundred milliliters (100 ml) from April 1 to October 31. The department may waive or relax this limitation if the owner or operator of the wastewater treatment facility can demonstrate that neither health nor water quality will be endangered by failure to disinfect. **Facilities without disinfected effluent shall comply with the implementation schedule found in subsection (9)(H) of this rule. During periods of wet weather, a temporary suspension of accountability for bacteria standards may be established through the process described in subsection (9)(I) of this rule.**

(9) General Conditions.

(H) Implementation Schedule for Protection of Whole Body Contact and Secondary Contact Recreation. Upon the first renewal of each permit upon the effective date of this rule, each permit shall be modified to contain a compliance schedule that provides up to three (3) years for the permittee to either install disinfection systems, present an evaluation sufficient to show that disinfection is not required to protect one or both designated recreational uses, or present a use attainability analyses (UAA) that demonstrates one or both designated recreational uses are not attainable in the classified waters receiving the effluent. Permit applications received after the effective date of this rule for newly constructed or upgraded facilities shall comply with this subsection upon permit issuance.

(I) Temporary Suspension of Accountability for Bacteria Standards during Wet Weather. The accountability for bacteria standards may be temporarily suspended for specific discharges when conditions contained in paragraphs (9)(I)1. through 3. are met.

1. No recreational use exists within two (2) miles downstream of the discharge during the period of suspension as confirmed through a use assessment.

2. Compliance with water quality based discharge controls more stringent than secondary treatment standards for domestic wastewater treatment systems, approved watershed management plans, or approved long-term control plans (LTCPs) for combined sewer overflows (CSOs) would result in substantial and widespread economic and social impact.

3. The Missouri Clean Water Commission has approved the suspension.

AUTHORITY: section 644.026, RSMo Supp. 1999. Original rule filed June 6, 1974, effective June 16, 1974. Amended: Filed April 1, 1975, effective April 11, 1975. Rescinded: Filed Oct. 16, 1979, effective July 11, 1980. Readopted: Filed Feb. 4, 1980, effective July 11, 1980. Rescinded and readopted: Filed Nov. 10, 1982, effective May 12, 1983. Amended: Filed Sept. 11, 1984, effective March 12, 1985. Amended: Filed July 25, 1985, effective Dec. 26, 1985. Amended: Filed Feb. 1, 1988, effective June 13, 1988. Amended: Filed Sept. 13, 1988, effective Feb. 14, 1989. Amended: Filed July 15, 1991, effective Jan. 13, 1992. Amended: Filed Sept. 2, 1993, effective May 9,*

1994. Amended: Filed March 1, 1999, effective Nov. 30, 1999. Amended: Filed Dec. 30, 1999, effective Sept. 30, 2000. Amended: Filed [month] [date], 2004

**Original authority: 204.026, RSMo 1972, amended 1973, transferred to 644.026, RSMo 1986, amended 1987, 1993, 1995.*

PUBLIC COST: This proposed amendment and the proposed changes in 10 CSR 20-7.031, Water Quality Standards, will cost state agencies or political subdivisions two hundred thirty million three hundred eighty-six thousand three hundred fifty dollars ($230,386,350) initially and forty-two million six thousand five hundred dollars ($42,006,500) annually in the aggregate.

PRIVATE COST: This proposed amendment and the proposed changes in 10 CSR 20-7.031, Water Quality Standards, will cost private entities twenty million three hundred ninety-two thousand dollars ($20,392,000) initially and twelve million three hundred forty-three thousand dollars ($12,343,000) annually in the aggregate.

The cost and figures are included in the documentation for both rules though the cost will only be incurred once. Since the Effluent Regulations are tied so closely to the Water Quality Standards, the cost cannot be distinguished as part of one rule or the other. Therefore, the basis for the cost estimation and assumptions are also described in the fiscal note for Effluent Regulations and Regulatory Impact Report for both the Water Quality Standards and Effluent Regulations.

NOTICE OF PUBLIC HEARING AND NOTICE TO SUBMIT COMMENTS: Anyone may file a statement in support of or in opposition to this proposed amendment with the Department of Natural Resources, Water Protection and Soil Conservation Division, Water Protection Program, Marlene Kirchner, Clean Water Commission Secretary, P.O. Box 176, Jefferson City, MO 65102. To be considered comments must be received within [days] (000) days after publication of this notice in the ***Missouri Register****. A public hearing is scheduled for [time] [am or pm], [month] [date] in the [room] in the [building], [address], Missouri.*